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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,504	06/27/2001	Hyeon Ho Son	054358-5003	8794

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MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

NGUYEN, JENNIFER T

ART UNIT PAPER NUMBER

2674

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,504

Applicant(s)

SON, HYEON HO

Examiner

Jennifer T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura et al. (U.S. Patent No. 6,069,620).

Regarding claims 1, 5, and 7, referring to Figs. 1, 7, 11-13, Nakamura teaches a method for driving a liquid crystal of a thin film transistor liquid crystal display (40), the method comprising the steps of: applying a first voltage corresponding to a real data during a data voltage applying frame; and applying a second voltage for maintaining a bend state and preventing the liquid crystal from restoring to a splay state during a maintenance voltage applying frame, wherein the real one frame for driving the liquid crystal (40) includes the data voltage applying frame and the maintenance voltage applying frame subsequent to the data voltage applying frame, and the data voltage applying frame is a data applying time and the maintenance voltage applying frame is a maintenance time, and the data voltage applying frame and the maintenance voltage applying frame are determined by a period of a signal applying to a gate (8) of the liquid crystal display (40) (abstract, from col. 3, line 19 to col. 4, line 46).

Regarding claims 2, 10, and 11, Nakamura teaches the first voltage, the second

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voltage, the data voltage applying frame, the maintenance voltage applying frame, and the real one frame satisfy the following equation: (the first voltage x the data voltage applying frame + the second voltage x the maintenance voltage applying frame) / the real one frame \geq a threshold voltage, wherein the threshold voltage is a minimum voltage for the liquid crystal to transit to the bend state from the splay state col. 3, lines 19-40, col. 4, lines 34-46, and col. 5, lines 27-39).

Regarding claims 3 and 12, Nakamura teaches each of the data voltage applying frame and the maintenance voltage-applying frame is a half of the real one frame (col. 5, lines 1-15).

Regarding claims 4 and 13, Nakamura teaches the maintenance voltage is a maximum driving voltage (col. 4, lines 34-65).

Regarding claim 6, Nakamura further teaches the maintenance voltage prevents a state transition of the liquid crystal from the bend state to the splay state, so that the liquid crystal is driven lower than a threshold voltage for a transition to the bend state (col. 4, lines 34-65).

Regarding claim 8, Nakamura also teaches that the maintenance voltage applying frame is subsequent to the data voltage applying frame (abstract, from col. 3, line 19 to col. 4, line 46).

Regarding claim 9, Nakamura teaches the data voltage applying frame and the maintenance voltage applying frame are determined by a period of a signal applying to a gate (8) of the liquid crystal display (40) (col. 4, lines 34-46).

3. The prior art made of record and not relied upon is considered to pertinent applicant's disclosure.

Hong et al. (U.S. Patent No. 6,469,762) teaches optically compensated splay mode LCD.

Okada et al. (U.S. Patent No. 6,221,444) teaches liquid crystal device.

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Hattori et al. (U.S. Patent No. 6,476,792) teaches liquid crystal display apparatus and method for driving the same.

Hattori et al (Pub. No.: US 2003/0001809 A1) teaches LCD device, method for manufacturing the same.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

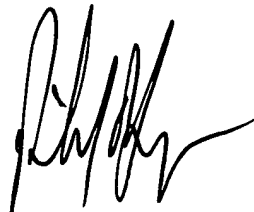
Washington, DC. 20231

Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

Jennifer T. Nguyen
08/28/03
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RICHARD HJERPE
SUPERVISORY INVENTOR
TECHNOLOGY CENTER 2600